Grower Summary

TF 172a

Evaluation and development of new rootstocks for apples – on-going work on existing plantings

Annual 2015

Disclaimer

The results and conclusions in this report may be based on an investigation conducted over one year. Therefore, care must be taken with the interpretation of the results.

Use of pesticides

Only officially approved pesticides may be used in the UK. Approvals are normally granted only in relation to individual products and for specified uses. It is an offence to use non-approved products or to use approved products in a manner that does not comply with the statutory conditions of use, except where the crop or situation is the subject of an off-label extension of use.

Before using all pesticides check the approval status and conditions of use.

Read the label before use: use pesticides safely.

Further information

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Project Number:	TF 172a
Project Title:	Evaluation and development of new rootstocks for apples – on-going work on existing plantings
Project Leader:	Felicidad Fernández, East Malling Research (from April 2014)
Contractor:	East Malling Research
Industry Representative:	Peter Checkley, Howard Chapman Ltd, Broadwater Farm, Broadwater Lane, West Malling, Kent, ME19 6HT
Report:	Annual report, 2015
Publication Date:	06 July 2015
Previous report/(s):	Annual report 2014
Start Date:	1 May 2012
End Date:	Due 30 April 2016 but was merged into TF 224 on 30 March 2015
Project Cost:	£51,731

GROWER SUMMARY

Headline

- Neither rootstock AR801-11 nor AR680-2 were found to be an improvement on the M9 rootstock for ‘Queen Cox’ grown under conventional management.

Background and expected deliverables

A review of AHDB Horticulture-funded rootstock research projects (project TF 158) acknowledged that there was a strong need for new or improved rootstocks for apples, pears, plums and cherries that are dwarfing, precocious, high yielding and offer some measure of drought tolerance. The report recognised that rootstocks are a vital part of the currently used growing systems for tree fruits, but those currently used in tree fruit production have been grown for decades and all have some limitations. Breeding programmes in the UK and abroad have generated a number of promising rootstocks in recent years, which are becoming increasingly available to growers. The report recommended that UK trialling of promising UK and overseas material should continue and that technology transfer should be improved. This work was then undertaken in AHDB Horticulture project TF 172 (*Evaluation and development of new rootstocks for apples, pears, cherries and plums*).

This project (TF 172a) is a continuation of AHDB Horticulture project TF 172 but focuses only on apple rootstocks. The main aim of the project was to acquire, evaluate and develop (in UK growing conditions) new apple and pear rootstocks produced by breeding programmes both at EMR and abroad. This project provided continuity of the trialling of fruit tree rootstocks at EMR, looking for rootstocks of intermediate vigour between M27 and M9 and a replacement for M26 in apple, with continued evaluation of existing plots that were identified as having new rootstocks of potential merit.

Selection and release of improved rootstocks to the industry will be of benefit to growers, as the introduction of new rootstocks with increased precocity and yield with fewer requirements for chemical or mechanical growth control, will have a huge impact on the profitability of UK orchards.

Summary of the project and main conclusions

This project (TF 172a) is a continuation of AHDB Horticulture project TF 172 for the evaluation of trees in some of the existing plots from AHDB Horticulture project TF 172. These plots were those identified as containing rootstocks with potential as commercial rootstocks.

Three existing plots containing the following rootstocks were assessed:

- Plot CE190: Rootstocks planted in May 2004 with 'Queen Cox' scion and compared to M9 were AR801-11 and AR680-2.
- Plot EE207: AR852-3, AR839-9, B24, R59 and R104 were assessed with M26, M9 and M27 standards; the orchard was planted in March 2010 with 'Braeburn' and 'Gala' as scion varieties.
- Plot VF224: AR10-3-9, AR809-3, AR835-11, R80 were assessed with MM106 and M116 standards with 'Red Falstaff' as the scion variety. The orchard was planted in March 2010.

After reviewing cumulative trial data from CE190, selections AR801-11 and AR680-2 were found to offer no improvement over the standard rootstock (M9) when grown under a conventional orchard system with 'Queen Cox'. AR801-11 was therefore rejected and AR680-2 will remain in the breeding programme pending results from overseas trials. As no further useful data could be expected from this trial, the plot was grubbed in spring 2015.

Commercial yields have yet to be attained on rootstocks being tested in EE207 (Conventional, with 'Braeburn' and 'Gala') so it is too early to draw conclusions on which rootstocks, if any, have commercial value. However, stocks R104, AR852-3 and R59 appear to be showing potential against the relevant controls (R104 and AR853-3 cf. M9; R59 cf. M27)

It is also too early to determine if any of the selections in VF224 (Organic, 'Red Falstaff' scion) are suitable as replacement rootstocks, although AR809-3 and R80 may have potential with regard to reduced vigour and yield respectively.

Trials in EE207 and VF224 will continue and will form part of a new combined project, agreed by the AHDB Horticulture Tree Fruit Panel in March 2015, that will integrate these trials with the East Malling Rootstock Club (EMRC) as one project (TF 224).

Financial benefits

- Selections AR680-2 and AR801-11 were found to offer no significant improvement over M9 and are therefore unlikely to be of commercial value. However it is too early to determine if any of the rootstocks in EE207 of VF224 are suitable replacement rootstocks for commercial production.

Action points for growers

- There are no action points at present.